

## FORWARD:

The Special Issue of *Global NEST Journal* “Air Pollution and Atmospheric Processes” includes a selection of papers presented at the 11<sup>th</sup> *International Conference on Meteorology, Climatology and Atmospheric Physics (COMECAP 2012)* that took place in Athens, Greece, 29 May - 1 June 2012 and the 12<sup>th</sup> *International Conference on Environmental Science and Technology (CEST 2011)* that took place in Rhodes, Greece, 8 – 10 September 2011. The *COMECAP Conferences* provide the opportunity for the dissemination of new knowledge in the framework of Meteorology, Climatology and Atmospheric Physics, hosting experts, scientists and mainly young researchers to present their recent research studies and share their innovating ideas. The *CEST Conferences* maintain and upgrade the integrated approach towards protection of the environment, by bringing together engineers, scientists, students, managers and other professionals from different countries, involved in various aspects of environmental science and technology. This approach, combining the integration of environmental issues with economic and social aspects, is a prerequisite for adopting sustainable solutions to numerous contemporary environmental problems.

In this issue, we present 14 papers in total, spanning a wide spectrum of scientific contributions relevant to the topic of Air Pollution and Atmospheric Processes.

Four papers are concerned with ozone concentrations. *Kalabokas* investigates the vertical ozone profiles during summertime at two airports of Aegean sea in order to reveal the major factors determining ozone variability in the lower troposphere. *Karavana et al.* examine the validity of van Heuklon’s formula, estimating ozone content in solar radiation models, against satellite measurements for a number of cities in Europe. *Proias et al.* analyses temporal ozone variability in an urban coastal Greek area for a period of eight years. *Fameli et al.* perform a comparative study of the land use changes in the Greater Athens Area before and after the 2004 Olympic Games as well as their effect on the ozone and NO<sub>x</sub> distribution profiles.

Three papers are concerned with particulate matter pollution. *Hoi et al.* examine the spatial and temporal variation of fine particulate pollution over a small coastal city of China, with the aid of a mobile monitoring platform. *Lianou et al.* estimate the impact of wind field on fine and coarse particles at four European urban centers using an empirical, semi-quantitative approach. *Triantafyllou et al.* quantify the contribution of five lignite power plants to the particulate pollution of the Western Macedonia region using measurements and model simulations.

Two papers concern with exposure to air pollution. *Diapouli et al.* examine the exposure to airborne particulate matter at a marble and treatment facility with the aid of PM<sub>10</sub> measurements. *Vlachocostas et al.* perform a combined analysis of personal exposure to noise and air pollution within the metropolitan centre of Thessaloniki, Greece.

One paper deals with indoor air quality: *Halios et al.* quantify the amount of Total VOCs emitted in a dental environment at the centre of Athens, Greece from commonly used substance in a controlled dental micro-environment in relation to wind speed and ventilation rates.

The last four papers are concerned with atmospheric processes which are related with air pollution. *Deligiorgi et al.* identify the pollution dispersion patterns in a complex terrain area in Crete, Greece associated with the operation of a diesel power generating plant under different meteorological conditions. *Karagiannidis et al.* analyse the meteorological conditions prevailing during a prolonged particulate matter pollution episode in an industrial area of Western Macedonia, Greece. *Kamoutsis et al.* investigate the bioclimatic conditions in different ground cover types in the greater Athens area, Greece: a major street with heavy traffic (MS), an adjacent pedestrian street (PS) with irrigated plants and an urban park. *Philipopoulos et al.* develop a hybrid dynamic-statistical downscaling procedure during summer in eight Greek sites

with different topographical characteristics using a regional modeling and artificial neural networks.

In summary, this special Issue presents papers related with air pollution and associated atmospheric processes in different indoor and outdoor environments, using modeling and measurements and provides a valuable contribution to various aspects of Air Pollution assessment.

The Guest Editors of the Special Issue

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